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ABSTRACT

This booklet analyzes the concept of competence in education and explores the background of this increasingly popular form of assessment. It focuses on the role of competence in four countries the United States, the United Kingdom, New Zealand, and South Africa and defines what is meant by competence. The report states that competence-based systems tend to operate with different emphases, such as the U.K.'s system, which is based on standards defined by industry. The text outlines the origins of competence in the four countries under consideration and presents two alternative competence models: the behaviorist model and the interactive model. Some applications of competence are discussed, along with the influence of competence on the curricula and on vocational education and training. Since competence and competence-based systems have come under criticism, some critiques are outlined, such as the idea that a competence is a complex entity comprising simpler items of ability. Criticisms have also emanated from the U.S., which had earlier embraced competence-based systems. However, few schools in the U.S. appear to have reorganized their curriculums to reflect new outcomes. The report closes with the plea that educators take note of the numerous criticisms of competence-based systems. (Contains 29 references.) (RJM)

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COMPETENCE

Past Debates, Future Problems

By Nisaar Mahomed

EPU Working Paper No. 10
December 1996

Education Policy Unit
University of Natal
Durban

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COMPETENCE:
Past Debates, Future Problems

by Nisaar Mahomed

Published by the Education Policy Unit
University of Natal
Durban 4041
South Africa
Tel: (031) 260-2607
Fax: (031) 260-2118
email: sharman@mtb.und.ac.za

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INTRODUCTION

Since the 1980s a number of Western countries have experienced common difficulties, generally linked to global economic competition brought about by the opening up of the world's markets, rapid technological change and massive unemployment. These countries have responded by proposing similar solutions regarding the structure of post compulsory education and training (Robson, 1994:63).

One consequence of this recent globalisation has been 'the homogenisation of conceptual analyses of education systems' (Christie, 1995:14) and the resultant smooth facilitation of education policy borrowing. This is the case in South Africa, particularly regarding the notion of competence. Competence is presently occupying centre stage within British, Australian, New Zealand and South African vocational education and training.

In these four countries it is seen as the linchpin of successful and rapid implementation of the system of national qualifications. This system is institutionalised, in the case of Britain, by the National Council of Vocational Qualifications (NCVQ), in New Zealand by the New Zealand Qualifications Authority, while South Africa has proposed a South African Qualifications Authority (SAQA).

The successful integration of education and training hinges on the issue of competence and this has three objectives. It aims to locate historically the competence issue, to look at aspects of its applicability and to look at criticisms of competence-based systems and gauge the extent to which

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such criticisms have relevance within the South African context.

WHAT IS COMPETENCE?

Competence is a difficult term to define, precisely because it has appeared in numerous guises, has different meanings and is the subject of intense debate. Many different terms are used to refer to competence and these terms incorporate meanings which are constantly changing. As a concept, competence has not been adequately theorised making it difficult to capture the 'complexities of the phenomenon it denotes' (McLean, 1995:17).

Competence-based education and training (CBET) is often given different names, including 'outcomes-based education', 'performance-based education', 'criterion-referenced instruction' and 'proficiency-based education', to name but a few. Other terms that refer to competence include competency, outcome and capability. Often these terms are used interchangeably depending on the sources being referenced. For instance, Australian sources use the term 'competence', while North American sources have a preference for the term 'outcome'. The problem of defining competence is exacerbated by the confusion arising from inconsistent use of terms.

Similarly, the meanings attributed to these terms and the relationship between the various elements that constitute competence also add to the confusion. Perhaps the best example is that of competence and performance. In some instances competence and performance are defined as entirely separate entities, while in others it is difficult to discern any difference (Ashworth, 1992:10).

In South Africa, policy analysts have attempted to shift away from a formulaic view of competence, embracing instead the notion of an integrated view of competence, one where knowledge and abilities are integrated within a value-based framework. However, such formulations give rise to another problem, that which relates to the meanings and interrelationship of, and boundaries between, those elements that are part of this integration process.

The Human Sciences Research Council (HSRC) document *Ways of seeing the national qualifications framework*, refers to competence as the integrated application of capabilities within specified contexts, which may stretch from being familiar and predictable to being completely uncertain, unfamiliar and unpredictable, depending on the level of competence required (1995:54). Within the National Qualifications Framework (NQF), competence can be recognised as a qualification. This means that a progression pathway of qualifications would therefore express different levels of competence.

To add to the confusion, there exists a continuum of definitions to distinguish one CBET programme from another. These can be categorised as narrow and broad views of competence. The former, dominant in the early part of this century, focuses on demonstrable skills. Adherents of the narrow view equate competence with performance. In South Africa, various industry based groups have traditionally adopted the narrow view of competence.

The broad view of competence is that it should:

> *include at least the knowledge and affective factors that underlie skills acquisition and*

> *sometimes also include experience and the ability to transfer competence to new contexts* (McLean, 1995:23).

The initial broad definition of competency was that it should:

> *embrace the ability to apply skills, to perform a task, theoretical understanding of the task, and the ability to transfer knowledge, skills and understanding to another context* (Christie, 1995:2).

Within the broad view, competence is seen as a construct that is not directly measurable.[1] Within the South African policy field, the Use, Speak, Write English (USWE) definition has reiterated this position by defining competence as a capacity that is not fixed or easily observable (Christie, 1995:24). While performance and human behaviour is easily observable, competence cannot be so directly measured. Single acceptance outcomes which are indicative of competent performance are rejected by USWE in favour of the notion of multi-variable contexts which ultimately lead to multi-variable acceptable outcomes.

Competence-based systems tend to operate with different emphases. In the United Kingdom (UK) the focus is on 'standards of occupational performance' while the United States of America (USA) focuses on 'competency development.' The competence-based system in the UK is based on standards defined by industry. Although numerous competence-based systems exist in the UK, they are all based on 'explicit behavioural or outcome-based statements'

[1] Constructs are terms used to label underlying skills and attributes.

(Fletcher, 1992:13). In the UK these statements are called 'criterion-referenced standards of occupational performance', while in the USA, they are 'criterion validated.' This means that they relate to real life requirements of performance, emphasising outputs rather than inputs.

Since competence presently derives from the needs of employment and work, most of the debate regarding its meaning revolves around how those needs are perceived. The methods for specifying competence which evolved in Britain over the last decade have been subjected to continuous evaluation and assessment. Competence is rooted firmly in the functions of employment and focuses on the outcomes that are required. This is achieved without imposing an educational model of how people learn and behave.

However, some critics, most notably Ashworth and Saxton (1990), have pointed out various difficulties associated with the term 'competence'. For a start, they feel that it should be differentiated from 'competency' which, according to them, refers to performance capabilities needed in specific occupational areas. It implies performance at a stated level and as such, competencies could comprise cognitive, attitudinal and/or psychomotor capabilities.[2] Similarly they argue that it is not clear whether competence is a personal attribute, an act or an outcome of action. In some cases the concept of competence has been attacked for being

[2] Notwithstanding these objections, this paper will use terms such as competency and outcomes-based education depending on the sources used. The understanding being that, together with the term competence, their meanings are essentially the same.

atomistic, individualistic and unable to cover all types of relevant behaviour or mental activity.

ORIGINS OF COMPETENCY

The United States of America

The competency movement has existed in the USA for the past 20 years, although there is evidence of its origins stretching back to the 1920s when the need developed for a 'more rational, cost-effective and practically useful curriculum' (Ashworth and Saxton 1990:3). There seems to be general agreement that competence-based education is primarily derived from teacher education with later developments extending the idea to elementary schools, then to minimum competency standards for high schools and finally to vocational education.

During the 1970s, the US Department of Health, Education and Welfare exhorted a number of colleges and universities to develop competence-based curricula. By the middle of that decade competency-based teacher education had developed into a self sustaining movement and the US Office of Education supported the promotion of CBET through a National Consortium of Competency-Based Education Centres (Tuxworth, 1995:13). One of the tasks of this consortium was to develop criteria for describing and assessing competency-based programmes. These criteria included:

- Competency
- Specifications
- Instruction
- Assessment

To look briefly at the first set of criteria, competences are based on an analysis of the theoretical roles and a theoretical formulation of professional responsibilities. Competency statements have two functions: they describe outcomes expected from the performance of professionally related functions and they facilitate criterion referenced assessment (Tuxworth, 1995:13). Regarding assessment, the Consortium determined that competency measures would/should be specific, realistic and related to competency statements (Tuxworth 1995:14). The essential elements as far as the consortium was concerned were that competences should be role derived and able to be specified in behavioural terms.

In the USA, vocational education has not always been competency-based. Vocational curricula were usually devised by teachers for institution based education. More emphasis was placed on theoretical book knowledge than on direct, applied, practical knowledge. The CBET movement offered an alternative to this in the design and implementation of vocational education and training, particularly in the opportunities it afforded for closer co-operation between the education/training function and industry, business and the professions. The systems for applying the concept of CBET are presently applied on a state-wide or regional basis but in most cases the delivery systems are institutionally and locally centred.

The present interest in competence based education, which has arisen as a result of the emphasis it places on direct practical knowledge, is a response to two other factors. These are: the increase in numbers and the diversity of prospective students, and societal demands for higher levels of competence. These in turn, were the result of concerns

that still resonate in modern day America. Briefly, these are: the demand for increased and different kinds of competence, the pressure for more opportunities to gain competence and an attempt to arrest the perceived decline in standards (Ashworth and Saxton, 1990:4).

The United Kingdom

In the United Kingdom (UK) the transition to a competence-based system can be traced to various initiatives, in particular, the publication of a series of White Papers between 1981 and 1986. Up until then CBET had evoked very little interest. There were two initiatives during the 1980s on which the political move towards change in education and training was premised.

The Royal Society of Arts was one of the first bodies to promote the notion of competence in the UK. Its schemes covered the spectrum from pre-vocational school-based to post-graduate level. In 1980 the Society identified four capacities which they considered to be under-emphasised in the education system. These capacities were competence, coping, creating and capability. By the mid 1980s most of the developments in competence-based learning had occurred in secondary and further education. Much of the debate during this period centred around defining competence and the standard used was from the Further Education Unit for whom competence was:

> *the possession and development of sufficient skills, knowledge, appropriate attitudes and experience for successful performance in life roles* (Ashworth and Saxton, 1990:5).

The next initiative was from the Manpower Services Commission whose New Training Initiative in 1981 argued for the fundamental reorientation of vocational education and training to meet the needs of changing work patterns in a rapidly changing technological age. This needed to go hand in hand with the reorganisation of the complex and fragmented provision of education and training and the equally complex array of qualifications, ranging from those granted by guilds and institutes established hundreds of years ago, to hundreds of more recently constituted professional bodies. These bodies differed on the form, size and status of qualifications, leading to the existence of a veritable 'jungle of qualifications' (Ashworth and Saxton, 1990:9).[3]

The recommendations contained in the 1986 report of the Review of Vocational Qualifications in England and Wales laid the groundwork for the establishment of the National Council for Vocational Qualifications (NCVQ). This NCVQ was tasked with bringing together all vocational qualifications within a new national framework, the National Vocational Qualification (NVQ) framework. This would incorporate levels of award up to higher levels of professional qualifications and would describe standards as 'competence'.

A commonly held view is that the route towards maintaining competitiveness in the international market place necessitates raising the skill profile of a country's workforce (Jessup, 1995a:7). By the late eighties many further

[3] Eight years later the situation had not been entirely remedied. Two million qualifications were awarded by roughly three hundred different awarding bodies (Jessup, 1995a:viii).

education initiatives and examining bodies had endorsed the competence criterion. An important feature of the NVQs is that the requirements presented as competence statements are set by employers and employees within industry, not by educational establishments. This ensures their direct relevance to employment requirements and also provides a benchmark for employers as major providers of training (Jessup, 1995a:37).

Other associated reforms such as more flexible and modular programmes and performance related certification have appeared in vocational education and training. The UK approach to CBET contains no prescription of delivery systems and assessment methods (Tuxworth, 1995:7). However, the concept, together with the 'principles for the derivation and expression of competence standards and performance criteria', has been firmly established (ibid:17).

New Zealand

In 1990, New Zealand established a national qualifications authority (the New Zealand Qualifications Authority) designed to establish a framework for all post-compulsory qualifications. Soon afterwards, as required by statute, it set up a national qualifications framework which bore a remarkable similarity to those established in other countries, such as the NCVQ in the United Kingdom.[4]

As with many other Western countries contemplating restructuring the education and training system, New Zealand embarked on this process because of rapid changes

[4] One major difference however was that the New Zealand framework was intended to encompass all qualifications, whether academic or vocational.

in the regional and global economic sphere, particularly Japan's phenomenal economic growth and the emergence of several other Asian countries as competitors. Another economic factor was the UK's entry into the European Economic Community in 1972, an act which signalled the loss of traditional markets for New Zealand exports and which, when combined with those factors mentioned above, resulted in the country spiralling towards economic catastrophe by the end of the decade.

In 1988 the New Zealand government established a working group on. In reporting to the Cabinet Social Equity Committee, it recommended that the country's post compulsory education and training system could contribute significantly to both economic efficiency and social equity. Importantly the report stressed the establishment of a national qualifications system which would reduce barriers restricting access to and movement between institutions (Robson, 1994:65).

A year later the government responded to the report with an undertaking that a national qualifications system was to be set up, developed and co-ordinated by a National Education Qualifications Authority. Its primary aim was the establishment of links between the providers of vocational training and the providers of advanced academic qualifications. In so doing the distinctions between education and training would be avoided and in the interests of access and transferability, the moves towards modular curricula were to be accelerated. These policy strands found their way into legislation with the Education Amendment Act of 1990 which sought to encourage:

> *participation by removing barriers to access for groups of people who had been previously under-represented in the sector as a whole* (Robson, 1994:65).

This Act also confirmed the establishment of the New Zealand Qualifications Authority (NZQA), but significantly, the title excluded the word 'education.' Both New Zealand and the UK put forward similar arguments in expressing the need for the establishment of a qualifications authority. Both stressed the high levels of overlap and fragmentation within and between the different educational institutions. In both countries criticisms of the system for vocational qualifications centred around their complexity and incoherence (Robson, 1994:66).

Similarly, concern was expressed regarding the:

> *relevance of many vocational qualifications to the competence required in work* (Robson 1994:66).

In 1986, the Review of Vocational Qualifications in England and Wales had argued for the importance of relating such qualifications to the workplace. In New Zealand this was reiterated and the system was regarded as being slow to respond to changing technological requirements. However, in New Zealand the difference was that more attention was paid to the need to provide post compulsory education and training for all. The emphasis in this case was more on social equity and the interests of the individual rather than solely on meeting economic needs.

The New Zealand framework marks an attempt to unify all levels of both academic and vocational qualifications within one system. Further discussions in New Zealand revealed a consensus for a broad competence-based approach to the framework. Equally influential in this regard was the Swedish qualifications framework in which one strand serves as a joint academic and vocational strand. Unlike Britain's NCVQ framework with its three pathways that incorporate A levels, General National Vocational Qualifications (GNVQs)[5] and NVQs in which there is very little chance of either improving access or aligning vocational and academic streams, the New Zealand framework does at least offer such opportunities (Robson, 1994:71).

South Africa

Between 1990 and 1994, groups as diverse as the African National Congress (ANC), the Congress of South African Trade Unions (COSATU), the Private Sector Education Council (PRISEC) and even the National Party (NP), addressed themselves to policy alternatives for educational reconstruction, either as separate organisations or within the broad-based National Education and Training Forum (NETF) and the National Training Board (NTB).

In the process of policy making it was inevitable that old concepts would be rearticulated and new ones introduced. A new concept was that of CBET. According to Christie (1995), the insertion of CBET on the South African policy agenda indicated the extent to which groups like the ANC,

[5] This is a broad-based vocational qualification which is assessed to national standards.

COSATU and PRISEC had been influenced by Australian debates. This was evident from the extent to which these groups referred to the Finn and Mayer Reports in their early deliberations (Christie, 1995).

The concept of competence had existed for some time within both Australian and South African training spheres but was regarded negatively in the formal schooling and higher education sectors. In both countries it became difficult for advocates of a competence-based approach to recommend a system that was accused of perpetuating some of the worst instrumental aspects of the 1960s and 1970s behavioural movement.

The difficulty in extricating the term from its behaviourist past compelled its advocates to adopt the more generic term 'outcomes-based' in respect of general education. Adopting a competency or outcomes-based approach, especially in the South African context, brought with it some advantages. Besides being part of the restructuring agenda that sees education and training as a basic human right, it also coupled equity with human resource development.

Considering South Africa's past iniquitous bantu education system, this emphasis on equity is desirable. Equally important, the White Paper on Education and Training (1995) conceives of education comprehensively and not merely in terms of schooling. The South African Qualifications Authority Act (Act No. 58 of 1995), calls for the establishment of a National Qualifications Framework which is intended to:

> *promote horizontal mobility between contexts, vertical mobility for all learners, credit*

> *accumulation and transfer and also recognition of prior learning* (Christie, 1995:4).

Such a system would have to offer different yet formally equivalent learning experiences in different learning contexts. It is within this context that the proposal for a competency-based system is located since it will offer flexibility in curriculum and assessment for different learners.

The international influence is apparent in the shift towards competence and an outcomes-based approach and this is also manifested in the notion of an *integrated* education and training system. In South Africa the impetus for a competency-based programme came initially from those groups opposing apartheid, primarily COSATU and the ANC. Their proposed strategy to achieve both equity and development was to improve education and training levels. This new agenda was to be cemented through the integration of education and training and the establishment of an adult education pathway with formal schooling equivalence. This coincided with proposals from unions and industry for broadbanding and multi-skilling.

South Africa's inability to generate an economic growth rate to sustain all of its redress needs is largely due to the lack of relevant skills within the country's population. Research on economies with similar problems has shown that it takes approximately twenty years to reverse such skill deficits. South Africa's present education and training system is designed to meet the needs of an outdated and narrowly

Taylorist[6] specification and this renders the economy incapable of competing with workforces that are educated and trained to be 'self-directed, innovative and reflective' (Tyers, 1996:44).

One solution lies in an innovative reform of the education and training system, probably through a National Qualifications Framework that could eliminate current deficits. In the NTB's 1994 report, the case was made for the 'integration of education and training in a single, modular, competency- and credit-based qualification system held together in an NQF' (Christie, 1995:6).

The NQF is an outcomes-based rather than a syllabus-based system, designed to accredit learning wherever and at whatever stage it occurs in a person's life (Young, 1996:2). In England and Scotland, the outcomes-based approach was developed for vocational qualifications, while in New Zealand an attempt was made to include academic and vocational learning within such an outcomes-based system. A major difference between South African and UK qualification systems is that the NQF attempts to integrate education and training instead of singling out vocational education

As a basis for developing criteria for future competence-based systems it is instructive to examine some of the global changes as they effect education and training systems. The increasingly short life of occupationally specific skills and the need for people to develop their generic capacities has resulted in a convergence of academic and vocational

[6] Taylor was the pioneer of scientific management at the turn of the century. His book, The principles of scientific management and the principles he espoused were used by industry for most of the 20th century.

learning. Many countries have also begun to shift the role of qualifications away from terminal assessment to an accreditation framework.

This is significant for South Africa where large numbers of the adult population are skilled and perform skilled work despite having little, if any, basic school education. They are nevertheless still paid as unskilled workers because they were excluded through their lack of basic education from gaining qualifications. This and other similar features of post apartheid South Africa provide the context for the proposed NQF.

ALTERNATIVE COMPETENCE MODELS

In recent debates, two models of competence have been raised, the behaviourist and the interactive. These two models are derived from conflicting schools of thought, the implication being that the use of competence as an educational concept is dependent to a large extent upon whichever model is dominant.

The Behaviourist Model

This is the model used by the NCVQ in the UK and it has been subject to scrutiny recently. It has either been advocated (Jessup, 1991), pilloried (Ashworth and Saxton, 1990) or the subject of constructive criticism (Burke,1989). Within this model, role performance dominates and is regarded as a composite of skills, knowledge and understanding. There exists a linear relationship between these three.

This model is premised on a school of thought that incorporates aspects of logical positivism which supports the notion that 'reality is external to the individual and objective in nature' (Hodkinson, 1992:31). This school of thought holds that knowledge is acquired through objective investigation. Such a view, when applied to competence, focuses attention on the elements of competence and the statements that define them. Thus the NCVQ system emphasises the functional analysis of occupational roles so as to determine the 'correct' elements of competence. This

work is controlled by industry specific lead bodies[7] which give legitimacy to the selection and definition of particular elements.

This model (and the theoretical framework which underpins it) is called behaviourist. Behaviourism sees learning as a response to external stimuli, with learners responding to their environment, amongst other stimuli. Under this system, learning is seen as goal directed. Goals are defined by behaviour that is measurable.

Under Britain's NCVQ system, one's ability to demonstrate appropriate performance of a role is regarded as proof enough that the requisite knowledge, understanding and skills are present. This flows from the assumption that there exists one correct form of understanding which makes performance possible. Within this system, very little attention is given to how role competence is learned (Hodkinson 1992:32). Other criticisms from Blackman, Brown and Haffenden (1990) have revealed that NVQ assessments, far from being objective and straightforward, are instead strongly influenced by context and are largely subjective. Also, it was found that these assessments were over specified (Hodkinson, 1992:32).

The Interactive Model

The interactive model is argued on two fronts. Firstly, this school of thought contends that reality is not given but is instead the product of interaction within, and between people. Secondly, it is argued that truth is not obtained in a

[7] Standard setting bodies, the English equivalent of South African Training Boards.

linear fashion but is rather mediated through a series of paradigm shifts wherein one reality is substituted for another (Hodkinson, 1992:32). It follows then, that searching for definitive elements of competence to fit occupational roles becomes futile due to the absence of absolute and objectively defined roles at the start.

Such roles are defined by/through perceptions which are culturally, socially and historically defined. Contemporary studies of how people learn have influenced this interactive view of knowledge construction. Learning is more than a sum of the interactions between people because it includes interactions between people and their environment. Learning therefore cannot be separated from its context since what is learned is intrinsically tied up with the activity of the learner and, more specifically, from the context and culture in which the learning takes place.

Unlike the behaviourist model of competence in which performance is the defining criteria, in the interactive view, performance is but one of numerous interwoven components, including schema[8] and intellectual processes. Altering performance involves a change in schema and the development of both involves complex intellectual processes. There is a continual dialectical interaction between these three components, in which a change to one affects the others. For the interactive model, the development of competence involves modifying the way in which one perceives the world and this in itself becomes an intellectual activity.

[8] This refers to a mental representation of a set of related categories. Schema theory sees learning as an interaction between learner and that which is learned. (Hodkinson, 1992:33)

The link between this and the world of work is provided by the rapidly changing nature of production in which, increasingly, workers need to be more skilled. Some professions require specialist knowledge while others insist upon a multi-skilled workforce capable of adapting to rapidly changing production techniques and new technology.

Such changing roles require 'intelligent practice', which entails the ability to learn from each performance, especially when the next performance will be different and not a repetition of the previous. What is essential under such conditions is a:

> *mixture of context specific knowledge and skill, together with generalisable abilities and strategies to cope with the unknown* (Hodkinson, 1992:35).

Similarly, elements of competence can no longer be absolutely 'right' since the model is underpinned by the notion that there are different and equally valid ways of defining and constructing a role. These are related to personal schemas and to the culture and context in which learning occurs. Elements of competence are more useful as tools for learning than for assessment purposes. Thus, learners should be able to critically understand the socio-economic and political contexts and constraints in which they operate and this is provided for in the interactive approach.

THE APPLICATION OF COMPETENCE

The notion of 'competence' which stresses specific items of work performance was adopted as the linchpin of the British NCVQ system. The idea behind this is that:

> *qualifications will be defined in terms of specific skills, capabilities, applicable pieces of knowledge and understanding which the individual is certified as having* (Ashworth, 1992:9).

It is hoped that these certified capacities will correspond to job demands, giving employers an indication of what to expect from potential employees in possession of a national vocational qualification. As such, competencies would be based strictly on an analysis of the capacities required to perform particular jobs.

Initially competencies were seen as instruments having the necessary flexibility that would allow the NCVQ to provide a common currency across all qualifications. However, this claim has recently been scrutinised and found wanting. Ashworth (1992) found that while theoretical knowledge and understanding were essential to being competent, this was ignored in the specification of competences. Also, while endorsing the notion that competency involves participation in teamwork, the British competency movement, through the NCVQ, stressed personal competences.

By adopting a behavioural analysis through their constant references to *individuals performing activities* (to indicate competence):

> *a person's command of a mental representation of the field within which that kind of competence is deployed, is not considered* (Ashworth, 1992:11).

According to Ashworth (1992), this is particularly true of the NCVQ competences. The problem here is that the NCVQ definition of competence centres on the notion of 'lived-through experience rather than reflected-on understanding'. Competences are defined by lead bodies on behalf of employers and are supposed to relate directly to work roles. However, within the NCVQ they are orientated towards individual performance, thereby ignoring the collective aspects of teamwork and contradicting present day management practice where work outcomes are the products of group work or collective endeavours.

The NCVQ proposals have advocated a scheme which relies on a consideration of outcomes based on observable behaviour. This proposal allows very little space for innovation and the assessment's main concern is with that which can be observed. Similarly, by assuming a unanimity of behaviour, no place is given for individuality or for individual cognitive activities (Marshall, 1991:61).

The current move to a competency-based approach to education is the result of a battle between universities and the workplace over who gets to define knowledge and learning. One reason why the workplace has won this battle (for now) is because the economic recession and lack of competitiveness on world markets is blamed on the school's inability to adequately prepare and educate learners for the world of work.

It follows that CBET is now regarded as the panacea for the economic crises facing society. However, as Lugg (1995) argues, restructuring education and training cannot single-handedly transform the economy or society. Any such restructuring which is informed by the needs of the economy, has to take cognisance of the needs of work which will then inform the process through which useful learning (especially for adults) is defined. This is particularly pertinent in the Adult Basic Education and Training (ABET) field. Broadened understandings of work, of community-based learning and the way that learning outcomes are described, would assist in challenging the conceptualisation of ABET.

Recent developments in Australia have illustrated the potential of the industrial workplace to define learning. Responding to that country's economic downturn and the decision to manufacture for the export market rather than merely concentrate on exporting raw materials, the Australian government concentrated on 'workplace and training reform to meet national economic needs' (Lugg, 1995:3).

Research by Finn and Mayer (Christie, 1995) unearthed several generic competencies which were required by workers across industries. The assumption was that if education and training concentrated on developing these competencies, the reward for industry would be greater productivity and quality. These competencies informed Australia's recent competency-based education and training system and have been incorporated within the proposed generic competencies outlined in South Africa's NTB National Training Strategy Initiative (NTB, 1994). This is

further evidence of how South Africa and Australia have applied the same educational responses to similar economic decisions.

Competence and Curricula

In competence-based curricula, learning is measured in terms of achievement of certain outcomes. Historically, competence-based models were developed to meet employers' needs, which basically means improving productivity. Thus, many competence-based models define learning in terms of narrowly-based performance skills, the demonstration of which was regarded as evidence of having acquired the necessary competence (Cosatu Participatory Research Project (PRP), 1993:59).

Quite rightly, such models were criticised for only teaching observable work place skills and they have subsequently expanded:

> *to accommodate a much broader vision of education which encompasses a wider range of knowledge, understanding and skills* (PRP 1993:59).

The broader definition of competence, which attempts to emphasise the process of learning, acknowledges that performance is:

> *underpinned by skill and a theoretical understanding of the task and the ability to transfer knowledge, skills and understanding to new tasks and situations* (PRP 1993:59).

There is no common understanding of what the term competence means within the context of curriculum design. It is often used to refer to three or more different levels of the same curriculum (PRP, 1993:59). This confusion is exemplified in the Australian Mayer Committee's recommendations where the term takes on three meanings. Firstly, broad subject areas are defined as key competencies, then strands within those competencies are seen as generic competencies and lastly competency is defined as 'each application of knowledge and skills in context' (PRP 1993:60). However, there exist some alternatives such as the Social Literacy Project, which has no fixed performance objectives, emphasising instead the process of learning and the development of critical understanding.

Often competence-based curriculum is perceived as being too narrow (Glatthorn, 1993). There are several bases for designing curricula, such as the nature of subject disciplines, the needs of the individual and the skills for reconstructing society to list but three. There is no empirical evidence to suggest that the outcomes-based or competence-based method of stipulating 'complex life roles' as the single basis, is actually better than the others.

The transformational approach, which OBE specialists endorse, is that subjects are not the organising centre but are regarded as only 'enabling' outcomes. However, while research in general supports the effectiveness of such curriculum integration, the jury is still out on whether such transformational approaches are superior to subject-centred approaches. Similarly, evidence suggests that in-depth knowledge is essential for problem solving and this:

> *would be difficult to achieve in transformational units that deal with broad and complex multi-disciplinary issues* (Glatthorn, 1993:356).

Competence and Modularisation

Educational innovations are developed in specific contexts which shape their implementation. The competency-based or outcomes-based approach is a case in point. The outcomes-based approach is a generic strategy which assumes numerous forms. Young (1995:173) defines the outcomes approach as:

> *one which asserts that the curriculum can (and should) be expressed in terms of measurable learning outcomes. It contrasts sharply with traditional curricula which are frequently expressed in terms of inputs (for example class contact hours). An outcomes approach can, in principle, refer to any kind of educational outcome, not just the units of competence with which it has been associated.....*

There are three kinds of outcomes which he identifies. The first is the unitised outcome approach which, while maximising flexibility, provides no mechanism for encouraging coherence on the part of the learners. The second is the integrated approach which groups outcomes together to form the basis for a specific qualification. Lastly there is the connective outcomes approach where outcomes are grouped together primarily in relation to how learners can incorporate their purposes into the curriculum as a whole (Young, 1995:173).

It is important to note that the form which an outcomes approach takes depends on the context. This is particularly true with outcomes of adult training, which are more likely to be either integrative or connective when employers and trade unions agree on the primacy of training, either as an investment or as a tool in negotiations.

Young endorses the idea of a connective curriculum. Such a curriculum would be distinguished from the traditional curriculum by two features. It is open because its concept of purpose involves the future which is neither fixed nor certain. A connective curriculum encourages feedback so that it not only shapes learners' purposes but is shaped by them. Within such a framework, modularisation facilitates the possibility of learner choice and new combinations of study that are relevant to the options a society will have in the future. Modularising the curriculum and defining roles in terms of outcomes are essential when designing a curriculum that involves learners.

Competence and Vocational Education and Training

There seems to be agreement that competence elicits widely divergent views. For some, it is broadly defined to deal with occupational roles, while for others, it refers to those routine aspects, veering towards the inputs of knowledge, skills and understanding. Within the vocational education and training world there are at least six models, four being based on

inputs.[9] The models which assume competence to be an individual attribute, refer to knowledge, skills, attitudes and concepts like personal effectiveness. This view predominates in US literature regarding the competency-based movement and management development.

The two remaining models are outcomes-based. This means they describe aspects of work roles that are not confined to descriptions of individual knowledge and skills. They do not describe knowledge, skills or any other individual attribute. Since they act as frameworks for identifying specific skills that contribute towards outcomes, they incorporate changes in work organisation and technology.

While all models adhere to the notion that competence is about performance, there are differences. The 'input' models view performance in discrete elements (content) while the 'outcome' models describe whole work roles or elements of roles. The latter approach is fast gaining ground. The South African economy's demand for adaptable and flexible workers is on the increase while the need for routine, technical task skills is declining, increasing the need for a holistic work role approach. In England this has already had an effect with Lead Bodies being advised to take a broad view of competence and adopt a holistic analysis to derive broad work role functions. (Mansfield 1995:34).

[9] This means they are based on assumptions about aptitudes, knowledge and skills which individuals already possess. For further explanations of the models see Ashworth (1992) and Ashworth & Saxton (1990).

CRITICISMS OF COMPETENCE AND COMPETENCE-BASED SYSTEMS

Implementing any new educational system is bound to be fraught with difficulties and this is true of competence and the NQF. Even in South Africa the competence movement has not been without its critics. However, because the term itself has proved to be so confusing, many of these criticisms have become bogged down in rather pedantic debates around grammar and the (ab)uses of the term. It is therefore appropriate to start by highlighting a few points about competence-based systems.[10]

Firstly, they are essentially *assessment* frameworks with very little attention paid to teaching, learning or the curriculum, except of course to define objectives. Attempts at increasing the precision with which learning outcomes can be defined invariably result in them being trivialised. This partly explains why competence-based systems were initially developed in relation to the vocational education sector where performances are unambiguously specifiable.

Unlike vocational education, general education has very few discrete and specific learning outcomes. This means that an assessment system would need to accommodate outcomes that are not predicted by an external standard (Young 1995:4). An essential difference between traditional school-based systems and the competence-based systems is that under the former, results, i.e. qualifications, are determined by competitive exams while under the latter, are measured

[10] For competence-based read outcomes-based.

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for qualifications by demonstrating what they know and what they can do.

There remain, however, numerous objections to the notion of CBET. The first is that the conception and definition of competence is inadequate. This relates, in the main, to the methods of analysis used to derive elements of competence. The second relates to the lack of evidence of the superiority of CBET to other forms of education and training in output terms. Competence has an unclear status. There is uncertainty whether it has mental or physical characteristics or whether it refers to behaviour. For Ashworth and Saxton (1990) some competence:

> *is the embodiment of a mechanistic, technically oriented way of thinking which is normally inappropriate to the description of human action, or the facilitation of the training of human beings* (1990:24).

A chief criticism of competence-based programmes is that they atomise tasks. This means that:

> *they break tasks down into such small bits that they lose the wholeness of what they are trying to define* (Holland, 1994:3).

Such atomising attempts to define and deconstruct tasks in a way that is understandable to everyone and to help to reduce the opportunity for misunderstanding, has the opposite effect. The learning paradigm that underpins this approach is the building block model of learning. This assumes that the:

> *learning of complex competencies can be broken down into discrete skills learnt separately, and that complex skills can be developed later* (Holland, 1990:3).

The shortcoming of this approach is that it fails to recognise that complex skills comprise numerous components which interact with each other. The idea that a competence is a complex entity comprised of simpler items of ability (elements of competence) is derived from the rather simplistic view that individual elements of competence add together to produce a global competence. However, individual items do not necessarily cohere in such a way to produce the accomplishment of a competence, whether it involves the task of changing a gear or installing a windscreen. Within a complex skill are elements which cannot be defined independently of, nor separated from, each other.

Secondly, competence statements are used as though they are immutable and unambiguous. In the field of literacy they adopt an autonomous model which runs counter to the belief that literacy is a more socially constructed set of skills in which personal interpretation and interaction mediate to give meaning to texts.

Another criticism is that competences are individualistic. The notion of competence that has generally been applied in the UK focuses attention on learning and assessment of the individual. This flies in the face of results from workplace actions whose outcomes are generally the products of group activity. In fact in such situations:

> *no one individual's mental powers or personal skills need to be the source of the successful outcome, nor need any aspect of the product be traceable to any individual* (Holland, 1990:13).

Recently Chris Yates (1996) elaborated on some of the contradictions in notions of competency as presently applied in South Africa. He argued that the prevailing climate, i.e. the pressure for sustainable economic growth and present dissatisfaction with existing teaching methods dictated that any curricula design should take into account the need to develop a performance-led system. However, in looking at curricula design he began to sense problems in the competence, or 'can do' movement.

Curriculum development, the process of defining what counts as valid and worthwhile knowledge, owes as much to creativity as to political contests and contexts (Yates 1996:13). In the field of distance education he argues that it is counterproductive to specify what one intends to teach before one engages in the process. This runs counter to the competency-based movement which places emphasis on what can be done and what demonstrable skills are possessed rather than what a learner can understand, or articulate and create.

In this arena, instrumental utility is much valued and Yates' concern was that this 'operational view' of education would become the defining ideology of all South African education from level 1 to level 9, in effect from the beginning to the end of the NQF. If this were so, those involved in higher education should have as their responsibility, the development of critical faculties and creative capacities

which would encourage learners to visualise a world shaped by different values and reasoning.

A competence-based programme (i.e a 'can do' assessment) is time-dependent and finite. Competence is demonstrated with respect to fixed moments in time. Understanding, on the other hand, can be deepened and is not dependent on time. For Yates, it is imperative that all parts of the education system should progress beyond the 'can do' approach towards developing the means to acquire, nurture and sustain understanding.

Another point of contestation is in the field of higher education and its relation to the NQF. Based on the notions of competency, the NQF's unit-standard methodology fails to deal adequately with the:

> *progressive development of conceptual skills which are characteristic of university education* (Strydom and Lategan, 1995:8).

This obviously has implications for discussions regarding the desirability of an NQF which encompasses higher education.

At the core of the NQF is a variant of the CBET model. Its origins are in behavioural psychology and industrial training schemes which use the more traditional norm-referenced system of assessment. Norm-referencing involves comparisons between the individual's abilities and those of another group (population) on whom the test has been standardised. Norm referencing is incompatible with assessment methods currently used in South African schools and universities.

Such CBET models assume that all learning activities can be 'compartmentalized into separate units which can then be learnt consecutively' (Strydom and Lategan, 1995:8). However, there is a danger in fragmenting knowledge in this way. It invariably leads to the exclusion of key cognitive capabilities such as understanding the intrinsic rules of academic disciplines or the ability to think logically. These qualities do not lend themselves to easy measurement in discrete and quantifiable units.

Criticisms of the competence- or outcomes-based education and training systems have come from many quarters, often from those very sectors which, until very recently, strongly advocated the system. At the beginning of the 1990s, the rhetoric supporting a massive US shift to an educational system organised around student outcomes reached unprecedented levels. Many states undertook to craft common learner outcomes and to endorse outcomes-based education[11] on a state-wide basis.

However, in the face of widespread criticism, the outcomes-based education plan stalled and many states were forced to revise or even drop their efforts. Criticisms were that the state's proposed outcomes 'watered down academics in favor of ill-defined values and process skills' (O'Neil, 1994:2).

Another reason for the process stalling was that, as indicated earlier, adherents often applied different interpretations to the concept of outcomes-based education. For some it meant that decisions about curriculum and instruction should be driven by outcomes which learners needed to display at the

[11] As indicated earlier, 'outcomes-based' is the preferred term in the USA.

end of their educational experience. From an educator's point of view, this meant that there should be clarity on what teaching should accomplish and teaching and assessment should be adjusted to achieve the necessary outcomes.

For others, there was the need to create outcome-driven systems that would redefine traditional approaches to accountability. The implication was that schools should accept responsibility for demonstrating that learners have mastered important outcomes (outputs) but not for their inputs, such as the per pupil ratio of books in the school library. Such difference of interpretation often resulted in different expectations of what outcomes-based education could deliver. The business sector responded more favourably to the notion of outcome-based accountability systems but disagreed with educators on the conception of desirable learning outcomes.

Similarly, very few schools (in the USA) appear to have reorganised their curriculum or overhauled their assessment and reporting schemes to reflect the new, higher outcomes (O'Neil, 1994:4). This is largely due to the fact that schools and states have difficulty overcoming the first hurdle, namely deciding which outcomes should form the heart of an outcomes-based education plan. Often, where states do manage to specify some outcomes, they are accused of 'prescribing the curriculum' or of interfering with local initiative.

Lastly, while it is true that outcomes can prioritise measurable behaviours, it is also true that analytical techniques which break learning into smaller components result in those broader qualities of the subject, discipline or profession being neglected. Narrowly defined learning

outcomes can lead to a trivialisation of learning (Ashworth and Saxton, 1990) and this may work against the transfer of knowledge and skills between different contexts. The net effect of this is that creativity in learning (and presumably teaching as well) can be lost or marginalised and the entire learning event then becomes sterile and too tied to specific tasks.

CONCLUSION

South Africa's policy makers need to take cognisance of the numerous criticisms from abroad regarding the competence-based system, in particular, its application to the still fragmented education and training infrastructure. These systems need to be reordered to accommodate a competence-based system and despite competence/outcomes predominating current debates, there is very little evidence of this happening.

The way in which competence came to dominate the education and training systems of other countries can provide us with insights that are relevant to the South African context. The fact that competence is still only discussed at national policy levels and not within school staff rooms, nor between lecturers and learners, does not bode well for the immediate implementation of the system. Competencies should not simply be imported from abroad (as was the case with Australia) but should be seen as issues of contestation, especially regarding the curriculum. In this respect, South Africa's policy makers should investigate the notion of broad and integrated competencies and recognise that competence is but one component of the source material for designing training.

Since the competency debate was initially located within adult basic education and training, there are reservations regarding its suitability for the learning and developmental processes of children. Similarly, the broad consultative process which characterised the NTB failed to include representatives of formal schooling and 'this influential constituency remains largely ignorant of the NTB proposals'

(Christie, 1995: 6).[12] These are some of the issues which the ongoing curriculum debates in South Africa need to resolve.

An objective of the National Institute for Curriculum Development was the development of an integrated approach to education and training. This proposed structure is now established as the National Institute for Lifelong Learning (NILL). There are proposals to establish similar provincial bodies. Although a draft curriculum framework document has been printed and it is claimed that implementation will begin in 1998, it would seem that South Africa is still developing an outcomes-based curriculum. This is a matter of concern because there is every indication that education and training are as far apart as they have always been.[13] Perhaps the new national Human Resource Development Strategy, which will be piloted in 1997-98, can achieve these objectives.

[12] In spite of the fact that an inter-ministerial working group on education and training had been established.

[13] Interview with Roger Etkind, general manager of the Automobile Manufacturers Industry and Education Training Board (July, 1996).

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